Mary LeeAnn King

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Employment Summary

UNITED STATES DEPARTMENT OF AGRICULTURE, ARS, Beltsville, MD — December, 2016 to Present

Visiting Scientist

Remote sensing and field sampling of cover crop performance on Maryland's Eastern Shore. Conservation Effects Assessment Project (CEAP) evaluation of the Choptank River watershed with extension of methods for county level assessment in New York. H.S. Supervised STEM Students with Greg McCarty and Dean Hively. United States Geological Survey (USGS) Project in collaboration with United States Department of Agriculture (USDA) at Agricultural Research Service (ARS).

THE DEPARTMENT OF GEOGRAPHICAL SCIENCES, UMD, College Park, MD — April, 2012 to November, 2016

Research Assistant

- Lead team of research scientists to calibrate and validate a prototype project to develop a new method of measuring and estimating crop-specific agricultural land area. Collect field data on production and productivity for use with RapidEye, Landsat and MODIS data to produce training datasets for global crop area estimates. Conducted international training for the use of Remote Sensing for land use monitoring. Expert image interpretation and knowledge of land cover and land cover change analysis using remote sensing data. Programming in Python, Perl, Easi and C++ and R. Employing ArcGIS, ERDAS, PCI Geomatica, Matlab, and R software.
- Work with partners from USAID, USFS, Silvacarbon and The Ministry of Environment and Forests for Bangladesh to provide training, data and consultation for monitoring resources using remote sensing data. Conducted extensive workshops, processing and preparing data and workshop material.

NASA'S LAND-COVER/LAND-USE CHANGE, UMD, College Park, MD — May, 2009 to April, 2012

Program Associate

Coordinating and implementing local, national and international scientific meetings in the United States, Estonia, Vietnam and Vienna. Provide programmatic support, reviews of scientific presentations and papers, produce program and meeting assessment reports, compose reports with written reviews of current research LCLUC, develop and manage program database and website. Middle level management. Program managed at the University of Maryland, Department of Geographical Sciences, College Park.

INTERNATIONAL INSTITUTE OF APPLIED SYSTEM ANALYSIS, Vienna, Austria — May, 2011 to September, 2011

Research Fellow

The development of an agricultural land cover, agricultural land use, agricultural productivity, agricultural crop yield and crop yield-gap map for the country of Tanzania using the Africover map, agricultural statistics at the second tier district level scale as inputs to the Agro-Ecological Zones model to describe the actual and potential production and distribution of agricultural lands for major food grains in the region.

THE DEPARTMENT OF GEOGRAPHICAL SCIENCES, UMD, College Park, MD — January, 2010 to June, 2010

Instructor, Geography 342: Introduction to Biogeography

Lectures, syllabus, assignment and exam development, student tutorials, grading responsibility, management over teaching assistant.

NASA FIELD CAMPAIGN, Washington, DC — August, 2008 to August, 2009

Field Assistant

Assisted Dr. Ralph Dubayah in preparation and execution of the second-generation field measurements in Sierra Nevada,

California and Bartlett and Hubbard Brook Research Forests. Developed field operations with maps, itinerary, route, data management in preparation for field measurements. Conducted floral survey with field measurement of forest canopy and landscape including species identification. Operated and organized a 20-person crew measuring 1-hectare plots, data entry and comparative analysis of over 60 sites to previous data retrieval in field to detect change.

UNIVERSITY OF MARYLAND, COLLEGE PARK, College Park, MD August, 2008 to May, 2009

Graduate Teaching Assistant

Geography 201/211 & 342: Introduction to Environmental Systems & Biogeography/Ecology; Lab instructor and lead teaching assistant. Instructors: Dr. Ralph Dubayah, Katie Martini, Dr. Chris Justice & Steve Prince.

Education & Expertise

UNIVERSITY OF MARYLAND (UMD), COLLEGE PARK, MD MS, Department of Geographical Sciences

Global Vegetation Models and Ecosystem Processes; Remote Sensing; GIS and Spatial Analysis; Land cover and Land use Change; Biophysics of Optical Remote Sensing; Physical Principles of Land Remote Sensing; Cultural Natural Resource Management; Location Theory and Spatial Analysis; Land Use, Climate Change and Sustainability; Ecological Economics.

UNIVERSITY OF MARYLAND (UMD), COLLEGE PARK, MD BS in Environmental Science and Policy

Cum Laude

GIS; Remote Sensing; Economics; Statistics; Biology; Ecology; Geology; Environmental Law and Policy; Environmental Issues; Population Issues; Conservation; Resource Management; Scarcity of Environmental Resources in Society; Principles of Organizations; Ethics.

Additional Qualifications and Activities

- ArcGIS, PCI Geomatica, Global Mapper, GPS, TOPO, IDL, ANOVA, R, Perl and general linear models; nonparametric statistics; floral census, data and crew management, strong leadership and management skills in her job and life.

- Monthly Service, Bread for the City: 2008- present
- Coordinator and Instructor for Yoga Activist, Petworth Library: 2011- present
- Curator for the Art Collective, Meso Creso: 2015-present
- Board Member and Project Coordinator at The Bike House: 2012- present

Publications

- **King**, L., Adusei, B., Stehman, S.V., Potapov, P.V., Song, X.-P., Krylov, A., Di Bella, C.,
- Loveland, T.R., Johnson, D.M., Hansen, M.C., 2017. A multi-resolution approach to
- national-scale cultivated area estimation of soybean. Remote Sens. Environ. 195, 13–29.
- Song, X., Potapov, P. V., Krylov, A., **King**, L., Di Bella, C. M., Hudson, S., Khan, A., Adusei, A., Stehman, S. V., Hansen, M. C. 2017. National-scale soybean mapping and area estimation in the United States using medium resolution satellite imagery and field survey. Remote Sensing of Environment Volume 190, Pages 383–395
- Adami, M., **King**, L., Mendes, F., Salgado, M., Aguiar, D., Hansen, M., Rudorff, B. Land use and land cover change over last decade due to sugarcane expansion in South-Central Brazil. GCB Bioenergy. In Review.
- Gutman, G., Justice, C., **King, L.** The NASA Land-Cover and Land-Use Change Program: Research Agenda and Progress (2005–2011) in Remote Sensing of Land Use and Land Cover Principles and Applications. CRS Press 2012. 379-96.
- **King,** L., Justice, C., Gutman, G. 2012. Spring 2012 NASA Land-Cover Land-Use Change Science Team Meeting. The Earth Observer.
- **King,** L., Gutman, G., Justice, C., Castrence, M., Samek, J. 2012. Workshop on Land-Cover Land-Use Change in

Southeast Asia. The Earth Observer. 24(3), 14-8.

- Gutman, G., Justice, C., **King,** L. 2012. Land-Cover/Land-Use Change Science Team Session at the 2011 NASA Carbon Cycle and Ecosystems Joint Science Workshop: Observations and Data for Land-Use Change with a Focus on Agriculture. The Earth Observer. 24(1), 27-9.
- Justice, C., **King,** L., Gutman, G. 2011. NASA Land-Cover/Land-Use Change Program 15th Anniversary Science Team Meeting. The Earth Observer. 23(4), 36- 9.
- **King**, L., Gutman, G., Justice, C. The Spring 2010 NASA Land-Cover Land-Use Change Science Team Meeting. The Earth Observer. 22(4), 34-8.
- **King,** L., Gutman, G., Justice, C. 2010. NASA LCLUC/GOFC–GOLD/NEESPI International Regional Meeting on Boreal and Temperate Europe. The Earth Observer. 22(6) 34- 8.
- **King,** L., Gutman, G., Justice, C. 2010. The Spring 2010 NASA Land-Cover Land-Use Change Science Team Meeting. The Earth Observer. 22(4) 34- 9.

Presentations

- Chinese Academy of Science (CAS), Institute of Remote Sensing and Digital Earth (RADI). Beijing, China. Measurement and monitoring of agriculture using multi-resolution remote sensing approaches for production estimates and resource conservation. December, 2017. **Invited.**
- Silk Road Innovation Forum on Surveying, Remote Sensing, and Geographical Information Sciences (IFSRG), Xi'an University of Science and Technology. A multi-resolution approach to national-scale cultivated area estimation of soybean. December, 2017. **Invited.**
- NCAR workshop on Climate Change, Global Food Security and the U.S. Food System. Presentation on agricultural mapping and area estimates for food security. July, 2016. **Invited.**
- LeeAnn **King**, Matthew Hansen, Alexander Krylov, Xiao-Peng Song, Peter Potapov, Stephen Stehman. Advancing Methods for Estimating Cropland Area. AGU annual meeting 2015, 2014.
- LeeAnn **King**, Matthew Hansen, Bernard Adusei, Peter Potapov, Carie Ernst, Jacob Noel. Quantification and validation of Landsat-derived sample-based area estimation of U.S. Soybean extent. AGU annual meeting 2013.
- LeeAnn **King** and Yuanji Li. Validation of model Radiative Transfer Model (Sun and Ranson, 2000) using ground measurements gathered in 2001 and 2008 to compare LVIS Lidar waveform data of Sierra Nevada, California. AAG Annual Meeting 2008, 2009.